

PATENT SPECIFICATION

DRAWINGS ATTACHED

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897.833

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COMPLETE SPECIFICATION

Improvements in or relating to Stoppers

5 We, THE CROWN CORK COMPANY LIMITED, a British Company of Apexes Works, Southall, Middlesex, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:

10 The present invention is concerned with stoppers, and is particularly concerned with stoppers of the "Crown Cork" type which can be used to seal a container such as a bottle.

15 According to the present invention there is provided a stopper of the "Crown Cork" type for sealing a container such as a bottle, comprising in combination a metal shell having a base and a flared skirt which is at least partially crimped, an intermediate portion of the skirt being of less diameter than both the rim of the skirt and the base, and a resilient insert within the shell, the resilient insert being in the form of a cap provided with a peripheral skirt which in use encircles the rim of the container and which has such inner profile and such resilience as to permit it to grip the rim of the container even when the insert is released from the shell, the insert being releasably retained in the shell by the provision on the insert of beading which projects outwardly from the skirt to engage between the base and the intermediate portion of the shell.

20 In a "Crown Cork" type stopper constructed in accordance with the present invention, the flexing applied to the metal shell when opening a container sealed by such a stopper is partially transmitted to the insert which prevents any appreciable distortion of the shell, or at least limits the distortion, so that the stopper can be used again to close the container.

40 With a stopper constructed in accordance with the invention it is possible to re-seal the container using the insert alone.

45 For a better understanding of the invention and to show how the same may be carried into effect reference will now be made to the accompanying drawings in which:

[Price 4s. 6d.]

Figure 1 is a sectional side elevation of an insert of a stopper in accordance with the invention, shown fitted on a bottle top,

Figure 2 is a sectional side elevation of a metal shell for use with the insert shown in Figure 1,

Figure 3 is a partially sectioned side elevation showing the insert, shown in Figure 1, and the metal shell, shown in Figure 2, assembled to form a "Crown Cork" type stopper,

Figure 4 is a partially sectioned side elevation showing a metal shell provided with a further form of insert and

Figure 5 is a plan view of the insert shown in Figure 4.

Referring to Figures 1 to 3, the insert 1 shown is in the form of a cap having a circular, substantially planar base, and a cylindrical dependent skirt. The cap has an inner face 2 and beading 3 which projects outwardly from the skirt and is continuous around the external surface of the skirt. As shown in the drawing, the skirt of the cap encircles and resiliently grips the rim of a bottle.

The metal shell 4 shown in Figure 2 comprises a circular, substantially planar base 8 and a skirt which includes a crimped flared portion 9 joined to the base by a turned over portion 16, the intermediate portion 10 forming the join between the turned over portion 16 and the crimped flared portion 9 being of less diameter than both the base 8 and the rim of the skirt which is at the maximum diameter end of the skirt and is remote from the base 8. The maximum diameter is indicated at 7 in Figure 3. The crimping of the flared portion 9 of the skirt is provided by a plurality of inwardly formed radially directed grooves 5 terminating in the join 10.

During assembly of the metal shell 4 and the insert 1 to form a "Crown Cork" type stopper, the beading 3, the diameter of which is slightly greater than the diameter of the join 10, is forced past the join 10 so that it engages with the inner face of the metal shell

4 and bears against the join 10, the base of the insert 1 being disposed adjacent to the base 8 of the metal shell 4.

5 The assembly may be carried out using previously proposed high output apparatus and the assembled stoppers may be used in a previously proposed bottle filling apparatus to which only slight modifications have been effected.

10 When assembled, the diameter 6 of the insert 1 is less than the maximum diameter 7 of the skirt of the metal shell so that the cylindrical skirt of the insert 1 is free to expand.

15 In a further embodiment of the invention shown in Figures 4 and 5, the metal shell is provided with an insert 11 having beading 13 corresponding to the beading 3 previously described with reference to Figures 1 to 3. The cylindrical skirt of the insert 11 has an inwardly projected thickened rim 14, and has an integrally formed outwardly projecting lug 15.

20 The assembly of the metal shell and insert 11 shown in Figures 4 and 5 is similar to the assembly of the metal shell 4 and insert 1 shown in Figures 1 to 3. When assembled to form a "Crown Cork" type stopper the lug 15 projects below the metal shell and may be used to facilitate opening when the stopper is fitted on a bottle top.

30 During assembly the inside of the metal shell is preferably coated with a layer of varnish or any other substance which will help the metal shell to slide off the insert when the bottle is opened, the thickened rim 14 acting to increase the gripping effect of the insert 11 on the bottle top so that the insert 11 remains on the bottle when the metal shell is removed.

40 The inner face 2 of the insert 1 which engages with the bottle top may be smooth, grooved or dish-shaped and may extend into the neck of the bottle and the beading 3 may be of rectangular, part-spherical, bevelled or any other desired section. The insert 1 is preferably formed of polyethylene or any other sufficiently resilient plastic suitable for bottle closure purposes.

50 The metal shell 4 is preferably formed of tinplate or any other metal which can be stamped out, the thickness being between 0.1 and 0.3 mm. The grooves 5 which may number between 30 and 50 may be formed either when the metal shell 4 is being cut and

stamped on an automatic multiple-punch press or by (straight) milling on a roller after cutting and stamping. 55

WHAT WE CLAIM IS:—

1. A stopper of the "Crown Cork" type for sealing a container such as a bottle, comprising in combination a metal shell having a base and a flared skirt which is at least partially crimped, an intermediate portion of the skirt being of less diameter than both the rim of the skirt and the base, and a resilient insert within the shell, the resilient insert being in the form of a cap provided with a peripheral skirt which in use encircles the rim of the container and which has such inner profile and such resilience as to permit it to grip the rim of the container even when the insert is released from the shell, the insert being releasably retained in the shell by the provision on the insert of beading which projects outwardly from the skirt to engage between the base and the intermediate portion of the shell. 60 65 70 75

2. A stopper according to claim 1 wherein the beading is continuous around the external surface of the skirt of the insert.

3. A stopper according to claim 1 or claim 2, wherein the inner profile of the skirt of the insert is such as to provide the skirt with an inwardly projecting thickened rim. 80

4. A stopper according to any one of the preceding claims wherein the metal shell is coated internally with a varnish or similar substance so as to facilitate the removal of the shell from the insert. 85

5. A stopper according to any one of the preceding claims wherein the insert is provided with a lug which is arranged to project beyond the metal shell when the insert is retained within the shell. 90

6. A stopper of the "Crown Cork" type for sealing a container such as a bottle, substantially as hereinbefore described with reference to Figures 1, 2 and 3 of the accompanying drawings. 95

7. A stopper of the "Crown Cork" type for sealing a container such as a bottle, substantially as hereinbefore described with reference to Figures 4 and 5 of the accompanying drawings. 100

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Agents for the Applicants.

Fig.1

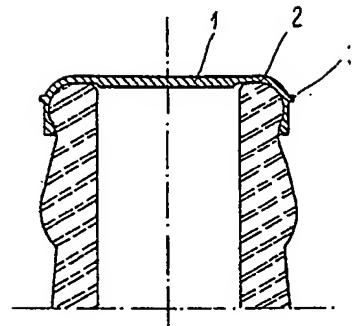


Fig.2

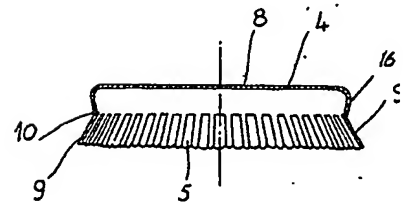
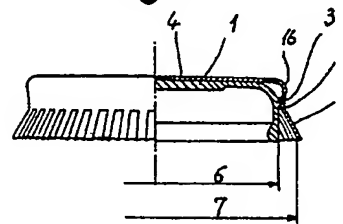


Fig.3



3.1

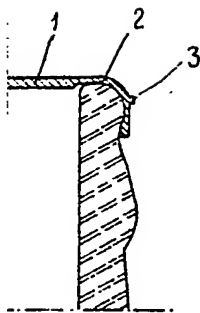
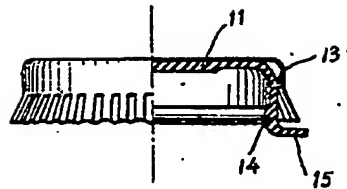


Fig. 4



3.2

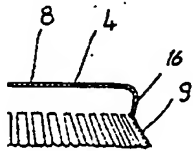
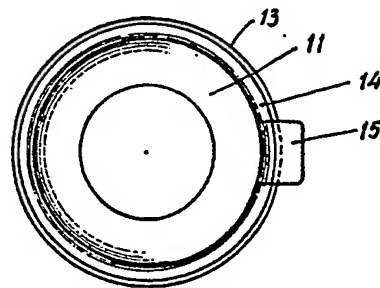


Fig. 5



3.3

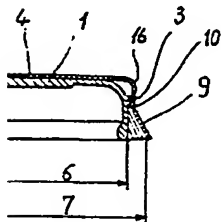


Fig. 1

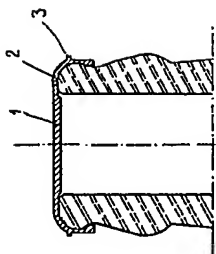


Fig. 2

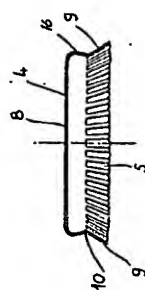


Fig. 3

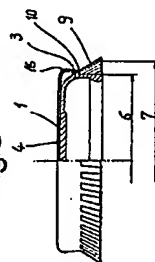


Fig. 4

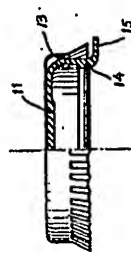


Fig. 5

